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HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

"Reason's whole pleasure—all the joys of sense—
Lie in three words, HEALTH, PEACE, and COMPETENCE."—*Pope.*

EDITED BY DR. ANDREW WILSON, F.R.S.E. &c.

VOL. V.—No. 122.] FRIDAY, AUGUST 7, 1885. [PRICE TWOPENCE.
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Dated this 9th day of March, 1866.

CHARLES LOCOCK, Phys. to H.M. the Queen. HENRY HOLLAND, Phys. to H.M. the Queen.
WM. FERGUSSON, Phys. to H.M. the Queen. J. R. MARTIN, C.B., F.R.C.S., F.R.S.

TESTIMONIALS FOR JULY, 1885.

GALVANISM v. CRAMP and RHEUMATISM.

Holly Brook, Hennar, Leominster, 18th July, 1885.

Dear Sir,—I beg to say that the Galvanic Combined Band I had from you some time since has quite cured me of Rheumatism and Cramp. I have recommended your treatment to several friends, and I think you will have an order from a gentleman in Leominster.—I am, yours respectfully,

(Mrs.) M. A. PHILLIPS.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM v. DYSPEPSIA and EXTREME NERVOUS EXHAUSTION.

Cavendish-grove, Southampton, July 16, 1885.

Dear Sir,—I have great pleasure in informing you that your Combined Band has most completely and effectively restored me to perfect health. When I applied to you for advice I was suffering from excessive nervous exhaustion in its worst form, accompanied by pains in the back and head, palpitation of the heart, sleeplessness, and spitting of blood, but these symptoms have entirely disappeared. With regard to the Galvanic Belt you sent me for Dyspepsia, I am happy to say that it has effected a complete cure. Permit me to express the deep gratitude I feel to you for the means of curing what I considered an incurable disease, and without which I might not have been alive to write this.—Thanking you again for your kindness, yours faithfully,

Mr. J. Pulvermacher, 194, Regent-street, W. J. W. B.

N.B.—Full name and address on application.

GALVANISM v. NERVOUS EXHAUSTION.

53, Park-street, Camden-town, N.W., July 15, 1885.

Sir,—I am happy to inform you that your Galvanic Belt has already done me an immense amount of good, and I have only had it a short time. You are at liberty to use this letter for whatever purpose you may desire.—Yours respectfully, J. LYONS.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM v. PAINS in HEAD and BACK.

2, Albany-villas, Ramsgate, July 14, 1885.

Dear Sir,—I am glad to tell you that I have found great benefit from your Galvanic Belt, and I am happy to say that the pains in the back and head are completely gone.—I am, yours faithfully, G. MUIRHEAD.

J. L. Pulvermacher, Esq., 194, Regent-street.

GALVANISM v. NERVOUS DEBILITY.

27, Mighell-street, Brighton, July 14, 1885.

Dear Sir,—I am happy to inform you that I have greatly improved in health under your wonderful treatment, and thanking you, dear Sir, for the kindness and attention you have shown me,—I remain, yours gratefully,

C. HART.

GALVANISM v. PAIN and WEAKNESS.

High-street, Wilvescombe, Somerset, July 13, 1885.

Dear Sir,—I am pleased to say that I have found great benefit from your Galvanic Belt. I am thankful to add that I have not lost three days' work since I have had it.—Yours respectfully, T. ROBBINS.

J. L. Pulvermacher, Esq., 194, Regent-street, London, W.

GALVANISM v. VARICOCELE.

23, Week-street, Maidstone, July 11, 1885.

Dear Sir,—With respect to your appliances in my case, there is no doubt that they are the only remedy to relieve the distressing effects of Varicocele, and I can say at the present time I am in a perfect state of health after three months' use of your Galvanic Belt. Thanking you for your kindness and attention,—I am, yours faithfully, W. H. REYNOLDS.

J. L. Pulvermacher, Esq., 194, Regent-street, W.

GALVANISM v. NERVOUS DEBILITY.

102, Grand Rue, St. Marie aux Mines, July 2, 1885.

Dear Sir,—A short time ago I bought at your establishment a Combined Band for my wife, who was suffering from Nervous Debility. I am pleased to state that my wife has already derived benefit, the pains in the back and head having almost disappeared. I consulted you in Regent-street about my sister's case, and having seen her physician he entirely approved of your system as being superior to all others he had seen; therefore, I should like you to send me another Combined Band, price £3. 10s., immediately.—I remain, yours faithfully, J. ZAEPFFEL.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM v. GENERAL DEBILITY.

Wingham, East Kent, June 12, 1885.

Gentlemen,—I have certainly derived remarkable benefit from the use of your Galvanic Battery in my complaint, general debility and stomach weakness, which first troubled me in May, 1884.

If you like to make use of this letter you are welcome to do so.—Yours faithfully, E. W.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM v. NERVOUS DEBILITY.

Wesley Manse, Clevedon, Somerset, June 1, 1885.

Gentlemen,—I have derived great benefit from the use of your Galvanic Appliances, and there is nothing I can so well rely on to restore the nervous energy as your Galvanic Belt.—Yours truly,

REV. A. D. COBB.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM v. NERVOUS EXHAUSTION.

Battersea, London, S.W., June 1, 1885.

Dear Sir,—I am pleased to say that I feel quite a new person since wearing your Belt. Your appliances have worked wonders with me, considering I have only had them five weeks.—I remain, yours faithfully,

C. H. COOK.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

MESSRS. J. L. PULVERMACHER & CO., the eminent Medical Galvanists, who have had upwards of 30 years' experience in the treatment of nervous diseases, give advice daily at their Galvanic Establishment, 194, Regent-street, W., free of charge, and patients who are unable to call should write, describing their symptoms, when medical pamphlet and advice will be sent post free.

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, AUGUST* 7, 1885.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

THOSE of my readers who have followed the progress of science in the matter of disinfectants are aware that the highest authorities give the first place in the rank of germ-killers to corrosive sublimate, a compound of mercury. Koch found that a solution of one part of corrosive sublimate in 5,000 of water destroyed most germs, while a solution of the strength of 1 to 1,000 killed all. No doubt has been cast upon the germ-killing power of this substance; and as a matter of fact, it is now employed largely by physicians and surgeons as an antiseptic medium.

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WHEN, however, we reflect that corrosive sublimate is a highly poisonous substance, we may readily understand why its use as an ordinary disinfectant, capable of being used by the public, is rendered impossible. A solution of the strength of one part in a thousand may roughly be represented by one ounce of the sublimate dissolved in six gallons of water, and this strength of fluid is that usually employed. It is satisfactory to observe that the difficulties experienced by medical men in employing this substance in exact proportions are now removed by a very ingenious process, the invention of Professor Helferich, of the University of Munich. A "tampon," or small receptacle, containing fifty per cent. of the sublimate, is made. When the physician wishes to make a solution for disinfecting or other purposes, all that is required of him is to cut open one of the "tampons," place it in a pint and three-quarters of cold water, stir it well, and in a few minutes he is presented, as the mercury dissolves in the fluid, with a solution of strength 1 to 1,000. I observe that Messrs. Essinger & Co., of 11, Hatton-garden, London, E.C., are the agents for the sale of these useful appliances, which thus enable medical officers of health, and physicians in attendance upon cases of infectious disease, as well as trained nurses, to apply readily and safely an agent of great value in preventing the spread of ailments.

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THE topic of the health of telegraph clerks has before now formed matter for sanitary discussion. In the interests of the welfare of an important body of public servants, I am glad to see the subject has once again come to the front. It seems that, as a class, telegraph clerks are singularly liable to suffer from nervous ailments. I learn that more than half of the pensioners from the Telegraphs Department have retired from causes of this kind. In explanation of these facts, the work of the telegraphist may be scrutinised with the object of discovering wherein the particular sources of these nervous ailments reside. Assuming that the all-important items of ill-ventilated rooms and overwork may be excluded from the list of causes of disease, it is not improbable that the sedentary nature of the occupation, as well as the presence of a continuous strain upon the nervous system, may lie at the root of the troubles in question.

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A TELEGRAPHIST requires, in the first place, to have his senses continually on the alert during his hours of duty. In the case of a busy office, it needs little force of imagination to picture to oneself the continuous strain to which eyes, ears, and brain—to say nothing of muscles—are subjected. Now, hard mental work is not necessarily injurious, always provided it is not of prolonged character. It is in the continuous, prolonged, and incessant nature of the telegraphist's labours, I believe, that the causes of his nervous ailments are to be sought and found. If we add to this perpetuated nervous strain the fact that the labour is of sedentary character; that fresh air, and above all, exercise, are things impossible of attainment by the tired operator, it is not difficult to see how his work may burn the vital candle at both ends, firstly, by directly exhausting his vital force, and secondly, by rendering him, through such exhaustion, incapable of taking the amount of free exercise which is indispensable for health.

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THE remedies for this state of matters lie on the surface of the question; and what applies to the overstrain of telegraphists, I need hardly say, will apply with greater or less exactitude to the worker who is confined to any monotonous occupation for too prolonged periods. Shorter periods of work, more frequent opportunity—and I will add, regular, opportunity—for exercise in the fresh air, and careful and abstemious living, are the sheet anchors of cure and of prevention of disease likewise. It is earnestly to be hoped that the Postmaster-General will take into consideration the above points before the evil complained of assumes larger proportions and becomes more difficult of removal.

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IN Prague the records of the Hospital of the Brothers of Charity show that from 1670 to 1815, when vaccination was unknown, the mortality from small-pox was 27 per cent. Between 1815 and 1885 the mortality was only 4·53 per cent. That vaccination has exerted an influence of the most beneficial kind upon the death-rate from small-pox in Prague, as elsewhere, appears to be an unquestionable fact. The above statement is given on the authority of Dr. Haas, of Prague, who has examined the hospital records. Of course, my anti-vaccinationist friends will say that what has improved the conditions of human life since 1815 has decreased small-pox; but, unfortunately for the rational nature of their argument, the existence of vaccination and the contemporaneous decrease of small-pox at large form awkward facts which not even anti-vaccination ingenuity can overcome.

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EXTREME sweating of the feet is not only a very annoying but very common affection. It may interest those who are afflicted with this trouble to note that suet combined with salicylic acid has been pronounced by the German Army surgeons to be a cure for this ailment. Two parts

of pure salicylic acid are combined with 100 parts of the best mutton suet, and this ointment is applied to the feet. The War Minister of Germany has ordered this preparation to be introduced into the Army medical stores, for the use of soldiers suffering from foot-ailment, or from soreness in riding.

* * *

WHERE pain is experienced in, and offensive secretions are discharged from, ulcerated surfaces, I observe a simple application, consisting of a mixture of equal parts of animal charcoal and camphor, is recommended for use. This expedient is of such simple nature that it may be worth remembrance by all who have to deal with cases of the kind noted.

* * *

A NEW filter is exciting some attention in sanitary circles, under the name of "Chamberland's Filter." This apparatus, according to a recent description, consists simply of a tube of porous porcelain, through which the water is forced. Any micro-organism or living germ contained in the water is effectually stopped by this filter, which is often used by M. Pasteur for separating micro-organisms from the fluids in which they grow. Twenty litres of water (a litre is 1·76 pint) can be filtered in one day, under a pressure of two atmospheres, through a tube measuring twenty centimètres (a centimètre is 0·39370 inch) in length by two and a half in diameter. The tube is fixed to the water-pipe, and can be thoroughly cleaned by putting it in the fire until the organic matter accumulated on its surface has been destroyed.

* * *

I RECENTLY observed that a case of dog-nuisance was decided in London in what appears to be a somewhat unsatisfactory fashion. A person applied to the Court for an injunction to restrain a neighbour from keeping a disorderly dog, which was alleged to bark at all hours, and to cause the appellant trouble and annoyance. The Judge refused to grant the injunction. I learn from the newspaper report that the dog was produced in Court, and was remarked by the Judge to be an apparently quiet, inoffensive animal. But, as we all know, often to the cost of our night's rest, quiet and inoffensive dogs may howl and bark the whole night through; and, as I have before remarked, it is nothing short of monstrous that the peace and amenity of a neighbourhood should be disturbed in this fashion. I fancy the appellant might have a good chance of redress if he proceeded to lay his case before a magistrate. I know the London magistrates at least, before now, have shown their sympathy with sufferers from the cock-crowing nuisance.

* * *

I FEEL curious to know how the law would have decided had the above case been one of cock-crowing, instead of dog-barking. The lively chanticleer might, of course, have been produced in court, like the dog; but would the decision have been for the defendant because the fowl appeared to be of a peaceable disposition? I have the greatest respect for the law and its administrators; and I do not pretend to traverse the legal grounds for refusing an injunction against what every one knows is a terrible nuisance, and an injury to health besides. But I do say the law is at fault which permits any man to keep animals of any kind which are calculated to "disturb the peace" in a fashion compared with which even the occasional tones of the street-preacher, the crash and bang of the Salvation Army's festive tunes, or the brawling of belated roysterers is but a light and temporary affliction.

Original Essays

"Life is not to live, but to be well."—*Martial.*

SUMMER AND HEALTH.

By M.D.

THERE are several considerations of high interest from a health point of view which may be said to arise out of the fact that summer is upon us, and that the "dog days," with their tropical temperature, are things of near approach. A very wide and interesting field of speculation springs from the relations which man may be said to present to his surroundings; and among such relations, those which he presents to the changing seasons of the years are by no means to be scouted or scorned as unimportant from the health standpoint. For example, to select but one from a multitude of observations and examples, the relations between skin and kidneys are abundantly demonstrated during the present warm season. As most persons know, skin, lungs, and kidneys perform the same kind of work. All three organs get rid of waste matters. They, furthermore, excrete the same substances, but in different proportions. Now, in summer, the work of the kidneys may be said to exhibit its minimum. It is in warm weather that the skin is specially stimulated to activity, and that its duties are performed, so to speak, under stress of work. A hot day causes us to "ooze at every pore;" and the perspiration—which is only waste matter filtered out of the blood—becomes vastly increased in quantity on the least exertion being undertaken. Stimulated thus to increased action, the natural result of the performance by the skin of "double duty" is to relieve the kidneys in their work. The activity of the kidneys in warm weather is therefore at a minimum; while, conversely, that of the skin is at its height.

Compare with this observation, so readily verified by an appeal to personal experience, the reversed conditions of the winter period. Then the skin-secretions are checked, and the work of the skin is reduced accordingly by the lowering of the external temperature. Consistently with this latter feature, the work of the kidneys increases in activity. Nature preserves the "physiological balance of power" in an admirable manner, and health, in one sense, is the outward and visible sign of this balance being maintained. The kidneys in winter are, therefore, stimulated, as the work of the skin is, in a measure, reduced; and the heavy end of the work of excretion is thus made to fall upon the internal, rather than the external, organs of waste-removal.

It is, perchance, not difficult to trace a deeper law and meaning than is at first apparent in this physiological and seasonal "see-saw." Just as elsewhere—in heart and lungs, for instance—there are ways and means of avoiding the effects of sudden strain, so in this seasonal variation of the labours of skin and kidneys there might appear a method of relieving each of these organs in turn from a continuous and uninterrupted fulness of work. The summer "rest" of the kidney balances the summer work of the skin, as the winter "rest"—using this word advisedly, of course—of the latter may be said to equipoise the heavier winter labours of the former organs. Man's constitution here as elsewhere, has, in fact, assimilated itself to its surroundings; and the natural result of harmonious bodily work—in a word, "health"—thus becomes possible, through such adjustment of the living frame to the variations of the world it inhabits.

Another phase of summer-life, possessing very close and intimate bearings on health, is that demonstrated by the consideration that amidst the heat of the season many disease-producing tendencies acquire renewed force and vigour. In summer we have need, in truth, to be largely on our guard against many forms of sanitary dangers which gather a new lease of life from the heat of the period. For example, dirt and filth of all kinds acquire great and increased power of producing disease. Putrefaction and allied changes proceed apace beneath the sweltering rays of the sun. The dangers of the dust-bin and the midden-heap become intensified tenfold at the present time. Nor is the reason of the development of disease and germ-life far to seek, or difficult to find. Heat causes all life to flourish apace. Just as in the tropics animal and plant-life flourish luxuriantly over the scantier fields of life at home, so in summer germ-development acquires increased force over its winter phases. The prevalence of much distress in summer from foul drains and dust-heaps is the natural result of the heat serving as the one great condition of life development. It is the wisest of cautions, therefore, which would insist on our paying increased attention at the present time to all such sources of ill-health as are represented in drains, closets, dust-heaps, and allied places. Let us flush our drains very frequently in summer; let us use disinfectants abundantly at the present time to dust-bins and in all other situations in which foul odours have to be conquered; let us see that we remove as far as possible from our dwelling-places all decaying animal and vegetable matter; and, above all, let us remember the remark that, while cleanliness in winter is desirable, in summer the purity of our surroundings is an absolute necessity if we would be well and keep well.

Dealing with summer and its duties in the way of health-preservation, reminds us that the matter of holidaying is one requiring special attention from all. In HEALTH, the good advice has been over and over again given that we should be well assured of the sanitary safety of our summer lodgings ere we rent houses or apartments at the seaside or elsewhere. That advice may be repeated here. How often do we hear of adults and children alike coming home from holidays only to sicken with typhoid fever, diphtheria, or other dreaded ailment. While we are by the sea, nature, fortified by fresh air and exercise, contrives to prop us up; but when we return home to our accustomed surroundings, the stamina of the holiday is exhausted, and the disease comes to the front, developes, and finally lays us prostrate. Better far no holidays at all than recreation-times which end in disease. Yet every summer brings a legacy of preventable disease in its train—disease, which timely care and the exercise of a slight supervision of our surroundings in the country or by the sea, would obviate. This last is, therefore, by no means one of the lightest of the misfortunes which summer brings in its train. Moral:—"Look well to the sanitation of the houses we intend to inhabit in our holiday-time."

As regards dress and clothing in summer, another field of public interest may be briefly alluded to here. Why is it that in the terrible heat of the summer days the British public will persist in sweltering under their ordinary garments? and why is there so little enterprise exhibited by us, as a nation, in adapting our costumes to our comfort? Recently, during the extremely warm weather, how refreshing it would have been for men to have donned complete suits of white materials, and to have imitated the ladies in the lightness of their garments. Instead, however, of such adaptation, the black coat, the tight waistcoat, the high collar, and, to crown all, the inevitable tall black hat—all means of exquisite physical torture in warm weather,—were to be seen, and, of course, will in future "dog days," as of yore, form the criteria of respectability, if not of sanity. There is no kind of dress reform which is more urgently called for among men than the reform of our summer costume. Here the ladies possess the clear advantage of light, airy dresses. Our nearest approach to them in this matter is the light tweed suit and the straw hat. Why, for comfort, could we not have a boating costume, neatly made, as an everyday habit in warm weather? There is no science or skill required to design costumes for men which shall be cool and airy. The "white hat" is a sop to the Cerberus of so-called "conventionality" and "respectability." May we not hope that at no distant date, the comfort of the head in the cool white hat will be extended to the long-suffering body, compelled to remain swathed in the black garments of ordinary life? Summer dress for policemen, railway-porters, and postmen would soon follow the adoption of light clothes by society at large. This reform only needs a beginning; and we hope that beginning will be made as a general movement now.

The subject of "Summer drinks," "Bathing," and other topics, must, from space considerations, be left for future treatment. Our present purpose will have been accomplished if we may have shown how, in very familiar ways and phases, summer-time, with all its pleasures, is apt to become a period of disease, which, however, is in most cases, happily preventible by the exercise of a little care.

HOW HOUSEHOLD REFUSE IS REMOVED IN EDINBURGH.—One or two wooden "backets" (made of slabs of deal) form part of the furniture of every Edinburgh household. They are exactly the shape of the English country wash-tub, as used in Somerset and elsewhere. They are shaped like truncated cones—the smaller base forming the bottom—so as to give a relatively wide open top, rendering the bucket easy to fill and easy to empty when laid hold of by the wooden ears which serve for handles. These "ash backets" stand in some convenient corner and receive the day's sweepings—the ashes after being thriftily sifted—and such *débris* as legitimately finds its way into our own dustbin. The daily vegetable refuse is promptly burned as soon as it becomes waste matter—or it may be dried under the stove at night—and what is fit to burn is burned in the kitchen fire in the morning. At six o'clock each morning in Edinburgh old town, and at seven o'clock in the new town, these buckets are carried to the kerb by the house-servant, and wait the public dust-cart. The two men who accompany the cart lift the bucket by its handles, and overturn its contents into the cart so easily that little delay occurs upon the journey; so that, with a sufficient plant of carts and men, Edinburgh may be looked upon as a town swept and garnished every morning but Sunday. This is no real exception, for the Saturday night cleaning is the great institution of the week, and then the clever managing servant carries her "backet" to the street just as the cart is about to pass, and has it "couped" and returned to her with the least possible loss of time. No "tip" is tendered or expected for this service, which is duly paid for on a business footing in the assessments. In London, where the dustman comes out of his way, with use of broom and spade, at varying expenditure of time, in cleansing receptacles of varying degrees of foulness, the custom of "tipping" for such personal service is of facile growth, and once established becomes difficult or impossible to eradicate.—*Sanitary Record.*

Public Health

"Health is the first Wealth."—*Emerson.*

OUR AMBULANCE LECTURES:

What to do in Emergencies and Accidents before the Doctor comes.

By Various Writers.

XX.—HOW TO TREAT FRACTURES OR BROKEN BONES (*continued*).

By James Whitson, M.D.

(Assistant-Surgeon, Glasgow Royal Infirmary.)

In the treatment of fractures there are two main objects which we must constantly keep in view. These are (1) the replacing of the broken bones in the position which they ought naturally to occupy, and (2) their retention there until a satisfactory union has taken place between the ends. In order to accomplish the first of these—the replacing of the broken bones in the position which they ought naturally to occupy—we extend the limb or, as the literal interpretation of the term implies, we stretch it. By this means the fragments in the great majority of instances are restored to their proper place. In extending an arm or forearm we pull upon the hand, and in performing a similar office for the leg or thigh we pull upon the heel. "Counter extension" is a force or weight applied in an opposite direction. For example, if we extend the forearm by pulling on the

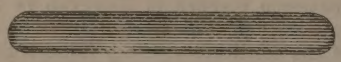

Fig. 1.—Splint Suitable for Broken Forearm.

hand, we can at the same time practise "counter extension" by fixing the elbow-joint, and when extending the leg or thigh the weight of the body usually proves a sufficient counter extendent.

Having reduced the fragments, we must endeavour to retain them accurately together by means of splints until bony union between their ends has been established. Splints vary in shape according to the limb with which we have to deal, but they ought to be of sufficient length to fix the joints on either side of the break. In a fracture of the forearm we require to render the wrist and elbow-joints immovable. Movement of either leads

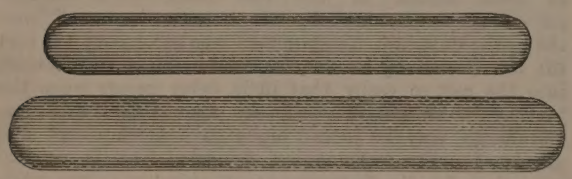

Fig. 2.—Splints Frequently Used for Fracture of Leg. Two Ought to be Used, and the Other is Exactly Similar.

to displacement of the ends of the fragments. In the same way the ankle and knee-joints must be securely held in fracture of the legs, as movement of these would be prejudicial to a good result. The extension of a fractured limb should be kept up until the splints are properly affixed. Neglect of this precaution often entails after trouble, and it is well to bear in mind that any sudden jerk inflicts needless suffering on the patient. In order to obviate these complications, it is advisable that one person should give his undivided attention to the injured limb. A second ought to hold the splints in position, while a third can apply the bandages. In this way the work will proceed smoothly, and the patient will be spared unnecessary pain. After everything is adjusted, care should be taken to see that the circulation is going on in the extremities. If it is not, the probability is that the bandages are unduly compressing the limb, and they should therefore be slackened without delay.

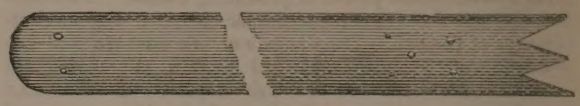

Fig. 3.—Thigh Splint.

Bony union must always be aimed at. Occasionally, when movement of the broken ends is permitted during the healing stage, we have ligamentous instead of bony union taking place. When this complication ensues there is then what is termed a *false joint*—a state of matters which renders a limb practically useless.

Such are the usual methods of treating fractures; but ambulance pupils must at all times be prepared to put up broken limbs with extemporised material, because accidents frequently happen where splints (Figs. 1, 2, and 3) and bandages of the orthodox pattern are not

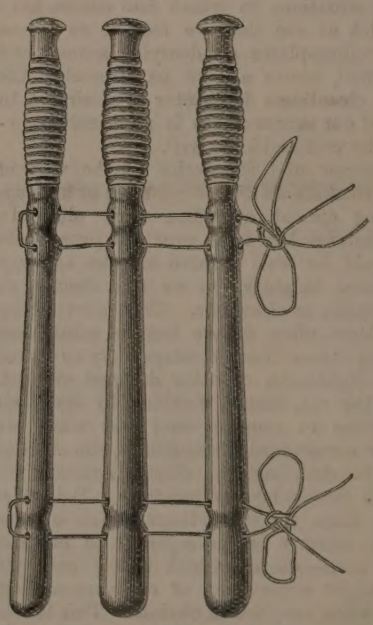

Fig. 4.—The "Ambulance baton" when taken to pieces.

Fig. 5.—The baton when put together.

at hand. For this purpose an immense number of articles of the most diverse character are available, and at a pinch it is wonderful what a little ingenuity frequently accomplishes. Anything which will give support to the injured limb without the imposition of much additional weight answers the end we have in view, and it is seldom, even in the most isolated spots, that something suitable cannot be obtained. Branches of trees, odd bits of wood, or sticks of some kind are, as a rule, readily procured in the country, while in every town-house there are

Buchan's Patent Prize Medal I.C. Exhaust Ventilators. The best in the market. Illustrated Price Lists free from W. P. Buchan, S.E., 21, Renfrew-street, Glasgow.—[Advt.]

innumerable appliances of the simplest description, such as rolls of music, periodicals, newspapers, umbrellas, or walking-staves, which may advantageously be called into requisition. In the event of an accident occurring in the street during the course of the day, the nearest grocer is generally able to supply the lid of a soap or orange box, and the hatter or draper is never without a bandbox, any of which, when broken up, are easily moulded to a limb, and form capital splints.

The policeman ought to know how to make use of his baton, and to the trained members of the force information of this kind is specially valuable at night, when shops and other places of business are closed.

A cleverly-designed splint-baton, which we hope before long to see regularly worn by the constabulary, has been recently brought out by Dr. William Macewen, of Glasgow. It consists of three parts (Fig. 4), and these, when lashed together, constitute a reliable weapon either for offence or defence (Fig. 5). The fact that it is composed of several pieces increases its strength, and at the same time prevents the further advantage of being convertible into an admirable splint. When secured round an injured limb, it affords a much greater amount of support than the common baton, and the leather thongs which, under ordinary circumstances, bind it into one, form convenient substitutes for bandages (Fig. 6).

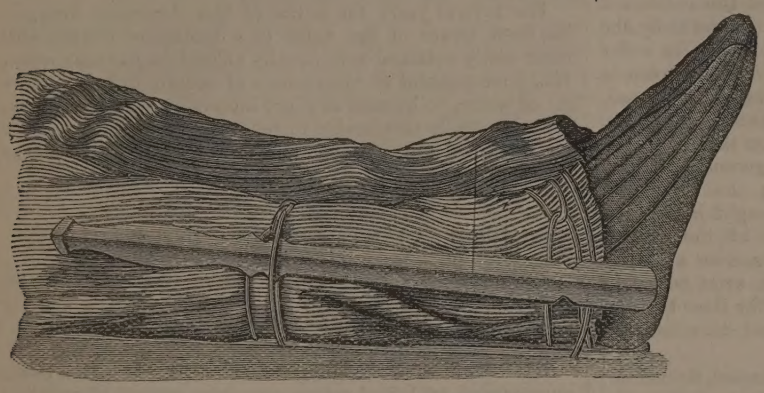

Fig. 6.—The baton used as a splint for a broken leg.

With such an implement in his belt, no policeman need ever be at a loss in treating a fracture of the leg or arm.

Accidents not infrequently happen on the parade-ground or at the sham fight, and if an ambulance squad is not attached to the regiment which is under arms, the Volunteer can put up a fracture of the thigh with his rifle, or a broken leg with his bayonet. When bandages are not forthcoming, it must be kept in mind that neckties, handkerchiefs, bits of twine or rope, bootlaces, &c., do almost equally well, and are readily available in nearly every situation. Did time and space permit, other instances might be adduced to show the extent and adaptability of extemporised material in the treatment of fractures, but the writer trusts that sufficient have already been indicated to give a tolerably clear idea of the many articles, comparatively simple in themselves, which can be improvised on an emergency and made to serve a useful purpose.

Scott's Midlothian Oat-Flour.—Messrs. A. & R. Scott, of Kingston, Glasgow, and Finsbury-square, London, have prepared a singularly pure and nutritious "Oat-flour," which bids fair to take high rank among the food products which are specially adapted for infants and invalids, and for the use of dyspeptics in particular, whose digestion is weak, and whose stomachs refuse to assimilate foods of ordinary kind.—Ed. Health.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

THE CONSUMPTIVE PERIOD OF LIFE.

Hippocrates declared that consumption gathers the greatest number of victims between the ages of twenty-five and thirty-five years, and the same observation holds true to-day.

As a first and natural deduction from this fact, the opinion has obtained that men are more susceptible to consumption between twenty and thirty-five, and that, passing this period, they gradually acquire an immunity from the disease.

A more careful study of the statistics, however, reveals a fallacy in this reasoning. Hitherto it has been the custom to reckon the mortality of each period of life as a fraction of the entire mortality of all ages. By this method it is shown merely that during certain decades of life more individuals die of phthisis than during other decades. This amounts, however, simply to saying that within these periods of life a greater number of people are living. The total number of deaths from any disease, at any given age, must be greater or less, according to the number of people existing at that age; and a large proportion of mankind are from twenty to thirty-five years old. In order, therefore, to determine the individual risk of consumption at any specified time of life, it is necessary to know the whole number of persons living at that age, and then compute the percentage of those who die of consumption.

Figuring in this manner, Würzburg estimated the annual percentage of mortality from phthisis at different periods of life in Prussia, and he compiled the following table for every 10,000 persons living at each period:—

Age.	Men.	Women.	Age.	Men.	Women.
0–1	24·95	21·92	25–30	40·04	33·58
1–2	20·27	20·55	30–40	44·25	38·12
2–3	12·09	12·94	40–50	57·10	40·10
3–5	6·49	7·18	50–60	82·38	54·48
5–10	4·07	5·26	60–70	112·25	76·09
10–15	4·35	7·38	70–80	75·23	50·03
15–20	17·87	18·87	Over 80	31·71	21·01
20–25	34·77	25·93			

From this table it is seen that a large phthisis mortality prevails during the first year of life; thence it descends to a minimum between five and fifteen years of age; from this point it increases with rapid strides, until, between sixty and seventy years, it reaches the high figures of 112.25 per every 10,000 living beings of that age: in other words, these figures mean that a man's liability to death by consumption increases from puberty till seventy years of age.

The companion column of the phthisis mortality of women shows that they are more frequent victims during childhood, but during the third decade and thereafter their relative liability is diminished.

These figures of Würzburg are confirmed in their main features by the investigation of Lehmann in Copenhagen,

Sanitary Inspections.—Fee for Survey and Report, in London 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

and of Schmitz in Bonn. Lehmann also extended his query to the relative duration of phthisis at different ages, and found that under twenty years of age more than seventy-five per cent. of phthisis patients die within a year. This rapid progress of the disease diminishes with increasing years until at least one-half of the cases, terminating after fifty-five years of age, present a record from three to many years' duration. It follows from this that a portion of the increased phthisis mortality of advanced years is due to cases which have lasted over from the earlier decades.—*Science.*

GETTING THE LIVER INTO ORDER.

The bile which the liver produces is secreted under very low pressure, and a very slight obstruction indeed is sufficient to prevent its exit from the bile-duct into the intestine. Its expulsion is usually aided by mechanical compression, because the liver lies directly under the diaphragm (or midriff), and during exercise it is compressed between this muscle on the one side, and the abdominal organs on the other; these are pressed up against it by the muscles of the body's walls. But this exercise, in order to be efficacious, requires to be brisk. When a person is sitting at rest, or even walking slowly along a level road, the abdominal muscles yield as the diaphragm descends, and so little or no compression is exerted on the liver. In running, in climbing, in jumping, in vigorous efforts of any kind, the conditions are different; the abdominal muscles and diaphragm are frequently brought into action at the same time, and thus compression of the liver is effected; thus a quarter of an hour's exercise at lawn-tennis, at cricket, at boating, or, perhaps, even better in riding, is more efficacious in stirring up the liver than an hour and a-half, or even more of a languid constitutional walk.

Such is the treatment that ought to be adopted, if possible; but where circumstances render exercise impracticable, the plan is to lessen the quantity of animal food, and to increase the action of the liver by hepatic stimulants. The mere sipping of water is a stimulant of this sort; not only has it the extraordinary action upon the circulation already mentioned, but it increases the quantity of bile and causes it to be secreted under a greater pressure, so much so that it will overcome an obstruction to its entrance to the intestine, such as would otherwise have stopped its flow. A glass of Carlsbad water sipped hot in the morning during dressing is very useful also, and, if necessary, recourse may be had to the powerful liver stimulants, euonymine, iridine, leptandrine, podophylline, and others, the action of which has been so carefully investigated by Dr. Rutherford.—*The Book of Health.*

In the cork-tree plantations of Lot et Garonne, Catalonia, and the Mediterranean region generally, a forest kept in good condition and worked for ten years will yield two-thirds of good ordinary corks, and one-third of thick and thin corks, the whole being of the average price of sixty francs per cwt.

Lemons for Ague, &c.—Dr. Crudelli, of Rome, gives the following directions for preparing a remedy for ague, which may be worth trying, as it is said to have proved efficacious when quinine has given no relief. Cut up a lemon, peel and pulp, in thin slices, and boil it in a pint and a half of water until it is reduced to half a pint. Strain through a linen cloth, squeezing the remains of the boiled lemon, and set it aside until cold. The entire liquid is taken fasting.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

TOOTHACHE REMEDIES.

Dr J. R. Irwin writes (as recently remarked in our pages), that one of the best and most pleasant things that can be used to relieve this painful state of the dental nerves is chewing cinnamon bark. It destroys the sensibility of the nerves and suspends the pain immediately, if the bark is of good quality. "After repeated trials, and in different cases, I am convinced that it is generally as efficacious as any of the other remedies suggested for toothache, and not attended with the unpleasant consequences of creasote, carbolic acid, &c., which relieve the pain, but leave the mouth as sore and painful as the tooth was previously, though these results are usually due to carelessness in using."

For several years the editor of the *American Druggist* has been aware of the value of a toothache remedy still more easily obtained and equally efficacious in many cases, viz., a teaspoonful of bicarbonate of sodium in half a glassful of water, to be used at short intervals as a mouth-wash. This is equally serviceable in relieving the sensitiveness of the teeth and gums of those who are obliged to undergo dental operations.

SOME PLEASANT MODES OF USING COFFEE.

Café au Lait.—Make the coffee with boiling milk, instead of water; sugar to taste.

Café Gloria.—Equal quantities of strong, bright coffee and cognac; sugar to taste.

Café au Lait.—Pint of good coffee, pint of boiled milk, quarter-pint of boiled cream, one drop essence of vanilla; sugar to taste.

Café Noir.—Half a cupful of the strongest black coffee, half a cupful of cognac; sugar and vanilla to taste.

Coffee Milk.—Boil a dessertspoonful of coffee (two drachms) in a pint of milk for a quarter of an hour; add shavings of isinglass to clear it; boil a few minutes, then let it rest to settle clear.

Ratafia de Café.—One pound of roasted, fresh-ground Mocha coffee; macerate for ten days in one quart of spirit; strain clear, and add one quart of clarified syrup, and water one quart.

Coffee Ratafia.—One and a-half pounds of freshly-ground Mocha coffee, one and a-half pounds of pulverised rock candy, half-an-ounce of bruised cinnamon, two drachms of grated nutmeg, two ounces of sweet almonds (blanched and bruised), half-a-gallon pure deodorised spirit; put these ingredients in a jar or jug, well corked and tied down; simmer it in a water bath for eighteen hours, and then keep it in a warm place for two days; filter clear. It will be fit for use in one month.

Coffee Granato.—One quart of Mocha coffee, strong and bright; one pint of simple syrup; mix and put in a freezing-pot; half freeze, and serve.

Liqueur de Café.—To an infusion of good, fresh-ground coffee, add one quart of water; strain clear to one quart of strong syrup, and add one quart deodorised spirit.

Coffee Syrup.—One pint of clear, strong-made coffee to one pint of syrup; clarify.

Coffee Vanilla.—One pint of clear-made coffee flavoured with vanilla, quarter of a pint of cognac, quarter pint of syrup.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

A CHAT ABOUT VENTILATION.

By David B. Dick.

Some theories of ventilation have been founded on the supposition that carbonic acid gas, being heavier than any of the other constituents of the air, would fall to the floor, and could be drawn off from there without disturbing the other and lighter elements. The law of the diffusion of gases proves this view to be erroneous. It proves that whenever different gases, of whatever densities, are allowed to mingle together, the proportions of one to another will be the same in every part of the mass.

A little reflection will show that it must be so. Because if the carbonic acid had the property of separating itself from the other gases and settling at the floor, the oxygen would also separate itself from the nitrogen and settle in a layer on top of the carbonic acid, because it is of less density than carbonic acid, but of greater density than nitrogen, and the union of the particles being merely that of mechanical contact in the one case as well as in the other. If the gases composing the atmosphere were to separate themselves in this way even for a few minutes, all animal life would be destroyed as effectually as by a deluge. Carbonic acid, therefore, diffuses itself as fast as it is produced. In studying any problem of ventilation, we are confronted—so often that we can never afford to lose sight of it—by the fact that the law of gravitation is of universal application, and that the coldest air falls to the bottom, and the warmest rises to the top, just as certainly as a stone falls to the bottom of a body of water, while a stick floats on the top.

Experimenting with a couple of thermometers a few days ago, I obtained the following results:—In a room without any fire or stove in it, but located between a hall and another room, in each of which there was a base-burning stove, the one thermometer placed upright on the floor against the base stood at 50 deg., while the other, hung on a picture-hook near the ceiling, immediately over the one below, stood at 68 deg.—a difference of 18 deg. In a bed-room warmed only by the heat from the hall, the temperature at the floor and ceiling respectively were 56 deg. and 62 deg.—a difference of 6 deg. In the room in which the base-burner stood, the temperature at the floor was 60 deg., and at the ceiling 84 deg.—a difference of 24 deg. These results were the more surprising in that I was careful to place the thermometer so that, as far as possible, the lower one should be out of reach of any special draught of cold air, and the other away from the direct current of hot air ascending from the stove.

In a room in which there was a steam-radiator, the respective degrees of temperature were, at the floor 56 deg., at the ceiling 72 deg.—a difference of 16 deg.—while at 5 ft. from the floor it was 62 deg., showing that there was a pretty uniform gradation from the floor upward. These tests were made at the side of the room furthest from the radiator. A thermometer placed directly on top of the radiator indicated 125 deg., and at the ceiling directly above it 95 deg. There are two thermometers in this room now. We will look at them. (Floor found to be 52 deg. and ceiling 73 deg.)

These figures go to show how difficult it is to warm uniformly any room by direct radiation. Their direct bearing on ventilation will be seen further on.

An excellent practical illustration of the system of ventilation which we had reached will be found in the ventilation of a coal-pit. It consists simply of a downcast shaft to admit *pure* air, and an upcast shaft to carry off the *foul* air, the workings of the pit to be ventilated lying between the two shafts. The current of air down the one shaft and up the other is maintained by the simple expedient of keeping a large fire burning at the foot of the upcast shaft. When a pit is first opened, there is only one gallery connecting the bottom of the two shafts. As the size of the workings increases, the stream of air has to be divided and subdivided so that every portion of the pit in which work is carried on will get its share. This is done by a complicated system of partitions and double doors, but the simple principle remains the same. Fresh air comes down one shaft, sweeps through all the different passages and galleries—sometimes many miles long—and passes up the other shaft, carrying with it all the foul gases which it has picked up by the way.

The problem, however, is not so simple as it looks; and this comparison with the coal-pit reveals to us where the difficulties principally lie. The ventilation of the coal-pit is simple for two reasons:—(1) Because no air can get in except when the engineer intends that it should come in, and (2) because the air does not require either to be warmed or cooled. It has simply to be brought in at whatever temperature it may happen to be outside.

In a building, on the other hand, with its numerous doors and windows, fire-places and flues, and cracks and crevices of every kind, cold air is continually coming in, in draughts, to interfere with our ventilating arrangements, sometimes completely upsetting them by reversing the course of the currents of air which we are trying to maintain. And, in this climate at least, it is always necessary to warm the pure air in winter, and sometimes to cool it in summer.

Before we can arrive at a definite conclusion, we must consider what becomes of the cold air that will find its way in, in spite of our efforts to keep it out. Little streams of it will flow in under the doors, trickle down the face of the outside walls, and especially from the windows; also from all the chinks that ought to be air-tight but are not. But wherever they come from, they will all settle in a layer on the floor. The thermometer, as we have seen, proves this, while our cold feet corroborate its evidence; and even the cat shows its knowledge of the fact by getting up on a chair to get out of it, or deserting her soft rug on the floor to sleep on the bare top of a kitchen-table. Having found out where the cold air is, we must now ascertain what becomes of the heat evolved by the occupants of the room and the lights. Assuming the desired temperature of the room to be as high as 70 deg., the temperature of the human body being over 98 deg., and that of a flame very much higher, it is plain that these emanations, being given off at a higher temperature than that of the room, will ascend towards the ceiling.

Lastly, we have to inquire what becomes of the watery vapour laden with organic impurities which is given off along with the heat. Now, we know that the warmer the air is the greater is its capacity for moisture. We also know that the air at the ceiling will be warmer than that at the floor: therefore, it will suck up this vapour away from the cooler air below.

Now, with all these facts before us there seems to be no possible doubt about the right positions of the inlets and

To Inventors.—Inventions protected by Royal Letters Patent at lowest rates. Provisional protection for nine months, £2. For all information concerning Patents address Messrs. Lulman & Co., Patent Agents, 8, Essex-street, Strand, London, W [Advt.]

outlet. The warm air, being admitted at the floor, will warm some of the cold air there, losing some of its own heat in doing so, then in its ascent to the ceiling it will carry with it the vitiated air and the watery vapour, with its organic impurities; and if the outlet is there at the ceiling, it will sweep them both out of the room without giving them a chance to cool and fall down again among the pure air. We see also that, as the warm air begins to rise as soon as it enters the room, the more it is subdivided into a number of separate inlets the better, because it will ascend by the most direct course to the outlet, and therefore a number of small streams will move the general body of air in the room more effectually than one large one, and be less likely merely to pass through it. It is also evident that a large quantity of air admitted at a low temperature and velocity will heat the room more uniformly and ventilate it more effectually than a smaller quantity admitted at a higher temperature and consequently greater velocity.

Although it is desirable that there should be a number of separate inlets it is better to have only one outlet, because if the suction should be greater in one than the other it might draw against it, and then the flow of air would be from one outlet to the other, instead of from the inlets to the outlet. If there are more than one outlet they should be connected together somewhere beyond the room.

How to Make Bay Rum.—1. For one formula, refer to the U. S. Pharm., 1880, page 310, the ingredients of which are:—Oil of myrcia, sixteen parts; oil of orange-peel, one part; oil of pimenta, one part; Alcohol, one thousand parts; water, seven hundred and eighty-two parts; to make one thousand eight hundred parts. 2. Another formula:—Tincture of bay leaves (one of bay leaves, twenty of alcohol), 6 ounces; oil of bay, one fluid ounce; borax, one ounce; carbonate of ammonium, one ounce; rose-water, one quart. (This is from a Continental source, and yields a product much differing from the genuine, but quite pleasant.) 3. Another:—Oil of bay, ten fluid ounces; oil of pimenta, one fluid ounce; acetic ether, one and a-half fluid ounce; alcohol, twelve pints; water, six pints. Macerate two weeks, then filter.

The Value of Friars' Balsam.—Bruce, in his latest work on Materia Medica notes the valuable antiseptic and disinfecting properties of Friars' Balsam, and explains its action on the blood and tissues in harmony with the authorities already quoted. Benzoin is used to disguise unpleasant odours in the form of pastilles for fumigation, and the balsamic, aromatic odour of incense when burned is exceedingly agreeable. In chronic catarrh and asthma the inhalation of the vapour has frequently a beneficial influence. The air of the patient's chamber may be impregnated with balsamic vapours by placing a little benzoin or tolu on some live coals and allowing the vapour to escape in the room, or the patient may inhale the vapour of boiling water, to which a few drachms of the balsam have been added. My friend, Mr. North, regards it as one of the most valuable agents when inhaled for the relief of chronic inflammations of the bronchial membrane. Naphey, in his work entitled "Modern Medical Therapeutics" (Philadelphia, 1884, page 117), gives the following recipe as a valuable remedy easily procurable:—"Immerse a piece of thick paper in a solution of nitrate of potash, dry the same, and then cover it with a layer of Friars' Balsam, cut the paper thus medicated into pieces three inches and a half long by one inch and a half wide, and fold these strips into cigarettes, from smoking which great relief in chronic bronchitis with asthma is experienced."

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL TRAINING.

By D. A. Sargent, M.D.,

Professor of Physical Training and Director of the Hemenway Gymnasium, Harvard University.

FIFTH PAPER.

If the house be provided with a play-room or a family gymnasium, well and good; if not, under the skilled directions of an enthusiastic parent, the doors and windows, chairs, tables, stoves, beds, &c., may be made to furnish appropriate exercise for the youngster. The will is wanted, that is all. With some children it is better to trust largely to the play impulse, being careful to direct it into proper channels, and to keep it within bounds. Once inspire a boy with the idea that strength depends upon health, and both upon exercise and the right care of the body, and you have lifted from his heart the burden of labour, and taught him the practical value of cleanliness, temperance, and self-mastery. Let a few enterprising families carry out this *régime* for a while, as they have in England and some parts of this country, and a public sentiment will soon be aroused that will carry the good work into the schools. This condition of affairs would presuppose the appointment of medical supervisors with their trained assistants, or teachers skilled in physiological science, and well-equipped gymnasiums and playgrounds.

In order to have some basis for classification, it would be necessary to have physical examinations at the outset. If the physician in charge has had much experience in his position, he has computed his tables, and knows the normal condition of the typical boy for every age, nationality, and class in life. The facts solicited concerning family history, heritage, diseases, &c, will give him important information as to natural resources. Then a test of the strength of various parts of the body should be made, and compared with the development of corresponding parts. A test of the muscular sense, difference between right and left hand, power of the will over the muscles, &c., would add greatly to the value of the data. An examination of the heart, lungs, liver, &c., should be made as far as practical, and the condition of the skin, circulation, respiration, and relative size of body and limbs, &c, be carefully noticed. The value of this work would be greatly increased if efforts were made to ascertain the size of the vital organs for different ages and conditions at autopsies. A disproportion in the capacity of the heart, lungs, and blood-vessels undoubtedly lessens the range of ability, and often invites disease.

From the data ascertained it is possible to form a fair judgment of the pupil's condition. The course to be pursued is shaped largely by the results of the examination and the ideal to be realised. The first object is to break up morbid tendencies, strengthen weak parts and start the youth on the road to vigorous manhood.

Unfortunately, nature has not dealt equally with all, and in many cases the differences at the outset cannot be overcome in a lifetime. Some she has richly endowed with splendid gifts, others she has left only an inheritance of evil. To some she has bequeathed health, strength, and ability to work—to others disease, feebleness, and capacity to suffer. For some she has opened up glorious possibilities,

and paved the way to grand and lofty achievements. Over others she has placed her cruel restrictions, and established boundaries which never can be surmounted with safety. It may serve, in a political sense, to say that all men are created free and equal, but it cannot be proclaimed in truth physiologically speaking. One of the saddest lessons an ambitious boy has to learn is the physical difference between himself and his neighbour. But he should be taught to accept it manfully and courageously, and be true to his own type and his own organisation. Knowing the true condition of the individual, and the training most suited to his particular case, it is necessary that the physician in charge have some knowledge of the appliances by which specific results may be attained. This knowledge, in a limited degree, is possessed by professional trainers, prize-fighters and men of this stamp, but has never been considered worthy the attention of educators and men of science. As a consequence, our youth have been left to choose their own methods of training, or have been forced through some stereotyped system which has been adopted on grounds of economy.

Not infrequently they have been advised by parents, teachers, or physicians to take exercises that have aggravated natural defects, and imperiled their health and happiness for a lifetime. Under the personal direction of an intelligent enthusiast, an ordinary school-room, as well as any other room, will furnish ample facilities for healthful exercise. Seats, desks, books, windows, doors, &c., all can be made to contribute their share to the development of the body.

But such ability finds a more lucrative field elsewhere, and under the guidance of the regular teacher, the school furniture soon assumes its customary function. No physical exercises are better adapted to school purposes than those of the modern gymnasium. The grand aim of this institution is to give a boy a harmonious development, and all its apparatus is arranged with this end in view. Many of its appliances are especially designed to strengthen natural weaknesses and remedy natural defects. On some of these machines the condition of the vital organs may be affected by localising the resistance to be overcome, and by carefully regulating the time, rate, and manner of movement.

There need be no fear of over-exertion, as the apparatus can be adjusted to the strength of the strong and the weakness of the weak. But the gymnasium does not stop in its usefulness with the strengthening of local weaknesses, and the relief of natural or acquired defects. It affords an admirable opportunity for exercise to all classes, at all times, and all seasons. It can be adapted to the use of large numbers, its courses may be arranged in a progressive series, and all its exercises may be so regulated and systematised as to be made highly educational. The periodical examinations and measurements which should furnish the basis for such a system should also determine its direction and limitation in special cases.

If the gymnasium is not properly equipped, and the pupils are obliged to adapt themselves to the crude appliances with which these institutions are usually furnished, it will fail to meet the wants of the classes most needing the training, or, if the examinations are dispensed with, and the accomplishment of feats, the winning of prizes, and the gaining of popular approbation, are made the chief incentives to effort, then the gymnasium will become a training school for specialists, the great majority of pupils will want a motive for faithful work, and the primary object of its existence, the symmetrical building of the body, will never be realised.

Jottings from the Journals.

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Phillip Sydney.*

The Morale of Architecture.—In a recent issue of the *Current*, Prof. Swing discusses the relation of the architect to his patrons. He finds a text for his discussion in the subject which the Illinois State Association of Architects had before it at its two last meetings. He holds that the architect is under great obligation to know all about what is called a building, and says:—"He may not be able to learn all in his brief life, or to carry all in his head, but he must take his stand upon the assumption that he knows all that is knowable in his field of knowledge. In the sense in which a lawyer must be familiar with law, as a railway civil engineer should know about grades and materials, as a farmer should know all about his special art, so there should be no detail in a building to which the architect is a stranger. Our college lecturers used to teach us that architecture, being a fine art, dealt only in the beauty of structures; that the carpenter, the mason, the gas-man, the sewer-man, must know all the more prosaic facts. But this was an absurd notion for two reasons—one that a building should have a master-mind, the other that there is no beauty in a building where the prosaic facts are not managed by a skilled intelligence. Beauty was once on the outside and lay in windows, columns and spires, but it has widened its sphere of late years, and now implies the harmony of all the parts from window to chimney-throat, from turret to sewer-pipe. This is the more imperative because the facts of the case are not so many that it will always require a half-dozen heads to carry them. If a man can not acquire and retain all the facts about a house, he should be excused from the profession, and advised to enter one where ignorance would at least do less harm.

* * *

School Vacations and Infectious Illness.—Within the forthcoming week or two public and private schools will disperse many thousand boys for the autumnal vacation; many girls' schools break up at the same time. At some of these we know there to be infectious illness, to which one and all the pupils have been more or less exposed. We refrain from mentioning the names of these schools, for we have good reason to believe that some of the responsible authorities have already intimated the risk that families will run if they receive into their households, without some intermediate quarantine, those members of their families who have been exposed to infection at school. It is no easy matter to exclude infectious illness from schools when the scholars re-assemble after the vacation, and it is far more difficult to prevent the dissemination of these diseases among the general public when schools disperse. Though the illness may not be severe in type, the introduction into a family of even a simple case of measles or scarlatina is attended with great inconvenience. Nor does it follow, because the phase of illness had been mild at school, it will be equally so in others who may become infected by it. Thus the risk to life may be considerable. School managers now require that parents should be very exact in making known to them any risks their pupils have run during vacation time, and we think parents have an equal right to be similarly informed of any risks to which their children have been exposed during term time. The advantages are reciprocal. Nor is the general public without an interest in this matter. An infected school, by dispersing the pupils, may lay a trail of infection along the

route any one of the pupil's travels. At railway-stations, in railway carriages, and public places of resort of any kind, infection may thus be conveyed. The law provides a punishment for those who wilfully expose themselves while suffering from dangerous infectious illness; but there is not sufficient provision against exposure during a period of incubation, which may at any moment become dangerous. We have known instances of such development between school and home. The pupil has left school apparently well in the morning, and the first indisposition displayed itself on the journey, which culminated in unmistakable infectious illness in the evening. Hence the necessity for an intermediate quarantine.—*Lancet.*

* * *

The Water-supply of Ancient Roman Cities.—Professor Corfield chose as the subject of his address at the anniversary meeting of the Sanitary Institute of Great Britain, the Water-supply of Ancient Roman Cities. He gave a most interesting account of aqueducts erected by Roman engineers, not only at Rome but for certain provincial towns. Rome itself was served by nine aqueducts, and it is a very striking fact, as showing the value which the wise rulers of ancient Rome attached to uncontaminated water, that the third aqueduct, erected over 2,000 years ago by the Prætor Marcius, and hence called the Marcian aqueduct, was no less than fifty-four miles long. The water-supply of the city was about ten times as great as London receives in proportion to the population, and all the water used for drinking purposes was brought from pure mountain streams. Small settling-tanks, in four compartments (piscinæ), were interposed, and were so constructed as to be easily cleaned. The channel (specus) of the aqueduct was generally constructed of blocks of stone cemented together and lined with cement; it was roofed over, and, in the earlier aqueducts, was carried entirely underground. But these mighty aqueducts were by no means peculiar to the capital, for wherever the Romans built a city there they provided for a copious supply of clear water; and Prof. Corfield gives a most interesting description of the three aqueducts of Lyons, especially of the great aqueduct built by direction of the Emperor Claudius to supply the imperial palace. The sources of a river were tapped at a point fifty miles from the city, and the water brought through a most irregular country, across valleys, one of which is 300 feet deep and about 1,000 yards wide; the water was taken down the sides of the valleys, and across the streams at the bottom, in eight or ten lead pipes, arranged as inverted siphons. Professor Corfield says of this that it was the most remarkable aqueduct of ancient times, reflecting the greatest possible credit on the Roman engineers, and showing that they well understood the principles of hydraulics. Yet this was only one of three aqueducts erected for the supply of Lyons. We cannot do better than quote the moral of such facts as these in Professor Corfield's own words:—"It is thus seen that the ancient Romans spared no pains to obtain a supply of pure water for their cities, and I think it is high time that we followed their example, and went to the trouble and expense of obtaining drinking-water from unimpeachable sources, instead of, as is too often the case, taking water which we know perfectly well has been polluted, and then attempting to purify it for domestic purposes."—*British Medical Journal.*

Scott's Midlothian Oat-Flour.—There is no preparation which can be assimilated with greater facility than such a flour as this. Those who suffer from indigestion might substitute for their ordinary breakfast materials this flour, prepared according to the recipe given by Messrs. Scott and printed on the tins.—Ed. Health.—[Advt.]

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A BOOK ON DEFORMITIES.

Face and Foot Deformities. By Frederick Churchill, C.M., Surgeon to the Victoria Hospital for Children. (London: J. & A. Churchill. 1885.)

This is a thoroughly scientific, as well as highly interesting, volume. It deals with a department of surgery which affords relief to conditions that are apt, from their very nature, to cause much soreness of heart, and to place their possessors at grave social disadvantage. Blemishes and defects of body, whether arising naturally—that is, as matters of inheritance—or acquired as the result of injuries, always form topics of surgical interest. Within, late years, also, much has been done in this branch of the surgical art, and advances of important kind have been made in the art of treating deformities safely and satisfactorily.

To the literature of this subject, Mr. Churchill's book is a valuable contribution, and it becomes the more important on account of its being based on a large personal experience in the treatment of such abnormalities. For example, the public interest which is taken in such surgical work may be gathered from the opening chapter upon the face deformities, which are known as "birth-marks," "mothers'-marks," and the like. These veritable blemishes, although harmless in themselves, cause their possessors great annoyance and mental pain, from the attention which they cannot fail to attract. Instead of passing a life of literal torment, it is satisfactory to know such persons may be largely or completely relieved of their troubles by operative means, at once simple and effective. Mr. Churchill carefully describes many of these methods of removing face-blemishes, and we opine his experiences, thus clearly detailed, will prove of immense value to surgeons in their efforts to restore the skin-tissues to their natural state.

The chapter on "Eruptions" is also carefully written, and tends to show how closely the sphere of the surgeon may approach that of the specialist in skin-diseases; while "parasitic diseases," such as itch, ringworm, &c., are also noted by the author. The section on "injuries" of the face and their surgical treatment is very full, and the plastic surgery of this region is also detailed with graphic power. The chapter on the eye and its injuries is also a valuable compilation of surgical axioms.

The "foot" and its malformations is treated in the later sections of this book; and a highly complete treatise on the ordinary, as well as the rarer, deformities of the extremities is presented to the reader. We must not omit to add that the book is splendidly illustrated, not only by woodcuts, but by chromo-lithographs and page engravings.

A BOOK ON GOUT AND ITS DIETETIC TREATMENT.

The Regimen to be Adopted in Cases of Gout. By Dr. Wilhelm Ebstein. Translated by John Scott, M.A., M.B. (London: J. & A. Churchill. 1885.)

That "protean" disease named "gout" has possibly formed the subject of a greater number of treatises than has been written upon any other branch of medicine. Comparatively few books, however, deal with gout from the standpoint of regimen, or that of diet and general health-treatment. It is the merit and advantage of Dr. Ebstein's manual that it presents the subject of gout to the

reader under a thoroughly "practical" aspect. He deals with the mode of living to be adopted, not merely by gouty patients, but by those "who have inherited a disposition towards the disease." In this view of matters Dr. Ebstein's little manual should be largely read by patients who wish to gain some knowledge of the special diet-rules, habits, &c., the observance of which may be trusted to enable them the more effectually to parry the attack of their dreaded enemy. That gout was an ailment to be largely avoided or completely prevented by careful and abstemious living was a maxim recognised by ancient physicians; and if we add to this advice the axiom that want of exercise was also productive of gout, as participation in active habits of body cured and prevented it, we may be said to have formulated all the ancient and most of the modern ideas regarding the prevention of this ailment.

Dr. Ebstein is a strong supporter of the theory that gout is a consequence of the presence of excess of uric acid in the blood. In his book on "Gout" he has endeavoured to show that this acid is a "chemical poison," and that it causes not merely inflammatory, but mortifying processes in animal tissues. At the same time, Dr. Ebstein entertains views of his own regarding the relation between the kidneys and gout, and maintains that we may find gout in active form, and persisting for a length of time without the structure of the kidneys being impaired. Through a somewhat discursive text, which might, with great advantage both to the author's reputation for clear writing and to the reader's comfort, have been much abridged, we reach Dr. Ebstein's ideas regarding the diet for the gouty patient. He is to have "a mixed diet composed of animal and vegetable foods," and is to have a very limited, or at least a carefully regulated, allowance of starches, sugars, and fats. Fats are not to be excluded from the gouty dietary, but are to be used carefully and with consideration for individual wants and needs. The dietary which Dr. Ebstein prescribes for the corpulent resembles in many points that he recommends for the gouty subject. Many vegetables (cabbages, &c.) are not adapted to the latter; potatoes are to be prepared as *purées*, and meat is to be scraped, or grated, and lightly fried in butter, if the teeth are defective.

Fruits are freely recommended to the gouty by Dr. Ebstein. Cherries and strawberries, especially the former, have attained a high celebrity in the treatment of the disease. "Cherry cures" and "strawberry cures," have long been celebrated in the treatment of this ailment. For drink, pure water is advised. Sydenham, as Dr. Ebstein mentions, recommended "a thin hopped or unhopped London small beer." Although alcohol is, as a rule, injurious to gouty persons, there are cases in which its administration may become a necessity. Baths are of importance in the cure of gout, and warm baths appear to be especially indicated by some authorities, although Dr. Ebstein himself appears to discredit their value as curative measures. Woollen underclothing, according to the author, is to be worn "even in the warmest weather." Woollen stockings are also imperative in his view; and the proper make of boots and shoes is regarded as a highly important part of the hygienic treatment of the gouty person.

The book before us, which has been conscientiously and accurately rendered in an English dress by Mr. Scott, may prove useful to gouty subjects. It does not strike us, however, as presenting the public with any very novel views regarding the treatment of the disease; although it may be said that the author has succeeded in presenting a readable *résumé* of the leading facts and rules which should guide the gouty patient in the selection and practice of a judicious mode of life.

At the Inventions Exhibition.

By Our Own Reporter.

V.

In the same class (3) the Municipal Appliances Co., 37, Victoria-street, Liverpool, show (224) some of their many specialties in connection with town sanitation, such as sunk orderly bins, sewer-flushing tanks, and the like. Their principal exhibit is a furnace for the consumption of town refuse, which is, we believe, now in successful operation in Bradford. In working this apparatus, a fire is lighted in the grate, and the heated gases flow upwards in a current the full width of the furnace. The refuse on the drying zone is thus partly dried and prepared for passing downwards to the fire-grate. As the chimney draught increases, the combustion becomes so keen as to convert the refuse into clinker, and part of the heat is regularly utilised in drying successive charges of material. No fuel is used after the refuse is thoroughly lighted, so long as the full draught is maintained. The fumes from the drying zone pass over a reverberatory arch on their way to the chimney flue, by which means the vapour is superheated and the obnoxious gases minimised; but when the gases passing from the furnace contain an excessive amount of sulphur or ammonia, a steam-jet or exhaust arrangement is applied, in which superheated steam is mixed with the gases. The mixed gases are afterwards condensed before reaching the chimney, by which means the hydrogen and nitrogen are recovered as ammonia, and the obnoxious fumes entirely destroyed. The resulting clinkers, it should be added, make, when ground with lime, a saleable mortar; and, by an ingenious process, heat resulting from the destruction of the refuse is used for generating steam required for driving the grinding-mills and mortar-pans.

Messrs. Sidgwick & Co., 5, Godliman-street, St. Paul's, London, E.C., exhibit (369) models of an improved orderly bin, which, originally designed for the streets of large towns, may be applied in principle to private houses with much advantage. Instead of an unsightly pillar stuck on the footway, with which Londoners are familiar, these bins are sunk below the level of the pavement, and within the inner line of curve. The bin is constructed of galvanised iron, slightly tapered on all sides towards the bottom. It is lowered or raised by means of handles attached to its sides in and out of an iron shell. The bin and shell being made to fit each other side for side, cannot become jambed or be prevented from closing by careless replacement, whilst the shell is left hollow at the bottom for the purpose of drainage. A modification of this bin might, as we have said, be used with much advantage in private houses, especially in those cases in which the very unwholesome plan of building the dust-bin against the house wall is adopted.

An improved method of removing dust and infectious matter from furniture, carpets, rooms and thoroughfares, is shown (304) by Mr. John Newton, 97, The Chase, Clapham, London, S.W. It is really designed to improve the old methods of "dusting" rooms, an operation which usually means nothing more than flapping the dust from one part of a room to the other. This Dust Inhaler, as it is called, consists of a horizontal fan suspended and revolved in a hollow cone over a tray of water, creating a partial vacuum in a small cylinder above the fan, from which, and connected to it, an elastic tube of any length, with a revolving hair or other brush at the end of the same, so that the brush loosens the dust, and the current of air entering the partially-exhausted tube, carries the dust with it through the fan, and impinges on the surface of the water; the air then passes through perforations free of dust. The inventor says he was first led to attempt the construction of this apparatus owing to his being called in professionally to find out the cause of close and bad atmosphere in a house, and discovered that after the furniture and carpets were removed the unpleasant stuffiness was gone. He looks forward to the time when steam or electrical power, applied to machinery working an enlarged edition of his machine, will really cleanse the principal streets of our cities and banish that mischievous enormity the water-cart for ever. Like most inventors, Mr. Newton is a sanguine man. But his "Dust Inhaler" is a very useful invention, and if it works in practice as well as it ought to work in theory, he has made a sensible addition to the means of keeping our houses sweet and clean.

Ventilation, on a large and small scale, are illustrated at a couple of stands. Mr. C. W. Crossley, 14, St. Mary-axe (142), exhibits in operation his air-propeller, a recent invention for the ventilation of large spaces. Its effectiveness is demonstrated by a moment's halt in front of it, and the inventor claims for it that it is much cheaper in its first cost, whilst giving better results with less expenditure of

power than any other fan. A high water gauge is not claimed for the Crossley Air-Propeller, but it moves a very large volume of air at an intensity quite sufficient for the thorough ventilation of mines, mills, factories, theatres, churches, hospitals, prisons, laundries, and such like places. The exhibit of H. W. Cooper & Co., Limited, 28A, Upper George-street, Edgware-road, illustrates ventilation on a smaller scale. The firm show Circular, Louvre, and Venetian ventilators in glass. It is enough to say that these ventilators have secured prizes, not only at last year's Healtheries, but at the National Health Society's and the Sanitary Institute's exhibitions, to show their excellence for the purposes which they are intended to serve. Another ventilating apparatus, designed in the first place for railway tunnels, but applicable also to all large buildings, is shown (320) by Mr. W. Clutterbuck, 12, Victoria-road, Kilburn, N.W. In this case the inventor uses a catcher, so arranged in the top or sides of the tunnels, or other places to be ventilated, that it will catch or obstruct the foul air from passing beyond it. Near to this catcher is an opening into a shaft, with a hinged door opening from the place to be ventilated, and so balanced that the pressure of air shall cause the doors to be opened outwards, and to be closed automatically upon such pressure being removed, and so prevent the return of the foul air into the tunnels or other places to be ventilated. In addition to this automatic action, a current upwards and outwards is induced by means of a fan or wheel, so arranged as to induce the foul air to travel through the shafts.

Among the miscellaneous exhibits in this class attention may be drawn to an instructive model sent by Viscount Templetown of improved cottages for labourers. The interior arrangements of these comfortable looking houses give two important advantages. By the first, three separate sleeping rooms are acquired, or, indeed four by means of a curtain or screen in the loft room. By the second, a hot closet is provided wherein the labourer, coming home on a wet evening, can dry his sodden clothing without any steam arising in the kitchen. Another exhibit worth notice is that (303) of Mr. John M. Knight, the surveyor of Mile End, of an invention by means of which sewers may be ventilated in the usual way at the surface of the roads, but the air at the same time being rendered innocuous. The *modus operandi* is extremely simple, and inexpensive withal. The shaft from the sewer is covered over, and an opening made in the side wall to a second chamber; before this opening stands a frame filled with cotton wicks, one inch apart, or less, the frame stands in a trough of chloride of zinc, or any other deodorising material in solution. The liquid rises in the wicks and is thus brought in contact with the sewer air, which it purifies before leaving the chamber. It must be remembered that the area of the spaces between the wicks is slightly in excess of the area of the ventilating grating. Some of these deodorisers have been at work at Mile End for a year and a half with excellent results, and as the troughs do not require re-charging more than twice a year the cost of working ought not to exceed 3s. per annum each.

In the Western Gallery Messrs. Walter T. Glover & Co., Bridgewater-street, Salford, Manchester, show (1,081) a variety of high and low pressure water filters, some designed for domestic use, and others intended for manufacturers and large consumers. One of the latter is remarkable as giving a very large filtering surface in the smallest possible compass, and for this reason might be usefully employed in many public institutions where the difficulty of filtering *all* the water used consists in the expensiveness and cumbrousness of the filters themselves. In this low-pressure "Challenge Filter" the water first of all passes over a horizontal bed which intercepts the coarser impurities—the bed consisting of an inexpensive material, the cost of a recharge of which is but a few coppers—and then reaches the second filters, which are arranged vertically in double sets. This design enables the patentee to place in a very small space an enormous filtering surface, and by the vertical position of these filters no settlement of deposit can take place on the surface, but falls to the bottom of cistern, where it is blown out of the sludge tap, placed for this purpose, into the drain or anywhere. These vertical filters are immersed in the water, therefore the water passes through the holes, and through the filtering material to the centre, from both sides at the same time, and from thence through the valves into the longitudinal pipe, and forward to where it is required. In order to cleanse the vertical filters a back pressure valve is attached to the other end of longitudinal pipe, which conveys the pressure to the inside of vertical filters, where it drives the filth outwards, which falls to the bottom of cistern, and thence through the slush tap. A scum tap and air tube are also provided, the former to remove the deposits in the first filter bed. The firm also show a large number of household filters of various designs, the filtering medium being a specially-prepared animal charcoal block enclosed in a bag of asbestos cloth, the latter catching most the impurities and so preserving the form for a long time in perfect efficiency. An ingenious modification of the same filter is found in their "Sir Garnet" pocket filter, in which the charcoal can be compressed to any required density by turning a bat-wing screw. Of course, the denser the filtering medium the purer the water, but the slower the process. The "pillar" filter for restaurant and hotel bars, and the "swivel" filter for affixing to the house tap are also specialities of the firm.

Dr. Alfred Wright, 40, Margaret-street, Cavendish-square, London, W., exhibits (1,842), and Messrs. Field, at their stand (1,192), manufacture a sanitary night-light, in which the essential oils of the Eucalyptus form a large component part. The *Eucalyptus globulus* (Australian Blue Gum) is a tree whose fame has of recent years been spreading with wonderful speed, owing to its disease destroying and health-preserving properties. That peroxide of hydrogen, the gas which, it is stated, is so abundantly given off by the Eucalyptus relieves paroxysmal attacks of whooping-cough and other spasmodic disorders of the respiratory organs, has been amply proved, and there seemed therefore good reason to believe that some preparations of Eucalyptus might he devised to exert a similar influence in controlling such paroxysms. Dr. Wright found that for the relief of asthma, whooping-cough, and kindred bronchial and pulmonary affections, in the Eucalyptus Oil, if properly combined with balsamic substances (such as benzoin) and with camphor, and then subjected to slow combustion, we possess a remedy equalled by none; and he therefore introduced these and other anti-spasmodics into the Patent Pulmonic Candles, the excellence of which are acknowledged by the profession and the public. Dr. Wright and Mr. Leopold Field then investigated the antiseptic and disinfecting properties of Eucalyptol, and the result has been the manufacture of the "Sanitary Night-Light," which, when burning in any apartment, emits the active principle of the essential oil of the plant, and is an absolute destroyer of evil odours. We should add that at Messrs. Field's stall there are exhibited in process of manufacture the "Samphire" and other toilet soaps, as to the excellence of which we wrote at length in our exhibition notices last year.

Sanitary Appliances, Etc.

THE VICTORIA TABLE-WATER.

We have pleasure in directing the attention of our readers to the "Victoria Water" as a pure and most excellent table-water, well adapted for family and constant use, and as one which does not exert any injurious or cumulative effect on the system. This water is taken from the famous spring named the "Victoria," at Oberlahnstein, near Ems, Germany. It is a water of highly palatable and pleasant taste—a primary consideration in a beverage which is recommended for table use. The waters of Ems are of mild alkaline nature, and possess very slight purgative properties, even in their most active form. In the case of the "Victoria Water" the purgative properties are reduced to a minimum, and the use of this water at table may therefore be safely indulged in without fear of any of those weakening effects which follow the employment of the produce of many other mineral springs. This water further contains no iron, and one great advantage of the absence of chalybeate properties is the power of using it to mix with wines or other spirituous liquors. As a substitute for ordinary soda and potash waters which, by the way, are often carelessly made, the "Victoria Water" is assuredly worthy a trial. For cases of dyspepsia, in which the tormenting acidity is a prominent feature, the use of the "Victoria Water" will be most serviceable, and as a refreshing drink in fevers and allied states we have no hesitation in advising the use of this beverage. We may add that in price the "Victoria Water" is most moderate, the charge for twenty-four large glass bottles being only seven shillings; while forty-eight small bottles are delivered free for ten shillings. The chief depôt for the water is the establishment of Messrs. Rommenholler & Co., 43, Finsbury-circus, London, E.C.

SWINBORNE'S PATENT REFINED ISINGLASS AND GELATINE.

The employment of isinglass and gelatine in the operations of the cook has reached a high pitch of perfection, owing to the many forms in which these sustances become useful and necessary for the production of the products of culinary skill. As every cook knows the use of inferior articles of this nature results inevitably in loss and disappointment. The purity and excellence of the isinglass and gelatine in use in households becomes therefore an essen-

tial condition of successful cookery. From an examination of the preparations of Messrs. G. P. Swinborne & Co., of 33 and 34, St. Andrew's-hill, London, E.C., we are enabled confidently to recommend their isinglass and gelatine to the notice of the readers of HEALTH. Their isinglass is made in two qualities, the merits of the lower priced preparations being, in our opinion, above those of the isinglass usually sold as first quality. It contains no insoluble matter, and its entire strength is therefore imparted to any preparation to which it may be added. The "calves' feet gelatine" made by the firm is also a most excellent article, which can be safely employed as a substitute for isinglass where cheapness and cost are considerations.

We must add that Messrs. Swinborne, with characteristic enterprise, have prepared and issued a very handy pamphlet, giving full directions for the preparation of jellies and creams by aid of their products. A variety of useful directions for the manufacture of cakes, meat, jellies, and other articles adapted for invalids and for ordinary use alike, is also given in the brochure, which can be had from Messrs. Swinborne on application to the firm, or with their productions, which, we understand, are now kept on sale by all grocers.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "THE PUBLISHER," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* EDITOR *and* PUBLISHERS *cannot hold themselves responsible for accidental loss.*

QUERIES AND ANSWERS.

[Queries sent on post-cards are not attended to.]

[We find it necessary to repeat the statement, frequently made in these pages, that, under no circumstances, can a reply be given in these columns in the same week as that in which a query is received. All despatch is used in replying to our correspondents, but our publishing arrangements do not admit of answers being given earlier than the succeeding week. The Editor cannot undertake to reply to correspondents *by letter*, except in special cases, the determination of which is subject to Editorial selection.]

[Owing to pressure on our space, several replies have been left over until next week.]

GENERAL.

A. G. S.; NOLLIE; FANBERT T.; A. C. P.; and MEMBER.—Declined with thanks.

C. C.—Please address the publishers.

THOMAS R.—The quantity should simply be increased; but the experiment involves elements of danger, and we should advise you not to attempt it.

A. L. BOAK.—To clean and restore kid shoes after they have been scratched or show the surface of kid worn off, try Judson's dyes the colour you require, and dilute until desired shade is obtained. When dry, finish with glair, *i.e.*, the white of eggs whipped up and allowed to stand. The liquid is poured off, and this is the article required.

JOHN RAE.—To make an ink which is black at the time of writing, but will disappear after a short time, boil nutgalls in aqua vitæ, put Roman vitriol and sal ammoniac to it, and when cold dissolve a little gum arabic, and it will, when written with, disappear in twenty-four hours.

J. JEFFREY.—Ozone is most abundantly produced by the action of electricity upon the air. Machines for this purpose have recently been devised, and are now for sale. Ozone is also generated when phosphorus is exposed to the action of moist air.

BARBER.—To make brilliantine for the hair, take honey, one fluid ounce; glycerine, half a fluid ounce; Cologne, half a fluid ounce; alcohol, two fluid ounces. Mix.

HOUSEMAID.—To clean silver, put two teaspoonfuls of ammonia in a quart of hot soap-suds. Put in the silver and wash it, using an old nail-brush or tooth-brush for the purpose.

A SUBSCRIBER.—Mead is a summer drink, and may be made as follows:—One pound of Spanish sarsaparilla; boil five hours and strain off two gallons, add sugar sixteen pounds and tartaric acid ten ounces. Half a wineglass to half-a-pint tumbler of water and half a teaspoonful of soda is a fair proportion for a drink.

A. T. T.—See HEALTH Nos. 118 and 119.

F. WARD.—A product of the distillation of coal-tar.

C. RAE.—1. Central-gear "Salvo." 2. Messrs. "Sociable." 3. Article on automatic steering will be given shortly. 4. Half sperm and half Rangoon oil.

A. N.—1. See Darwin's "Fertilisation of Orchids." 2. Bastian's "Brain" (International Science Series).

R. BAYNE.—The formula is a private one, we believe.

T. W.—Avoid all doctors who advertise. This is the only safe rule.

N. G. W.—We believe an order from the Home Office would be the easiest fashion. The food-tables could certainly be inspected as a mere matter of courtesy.

JUSTICE.—Many thanks. Your request has been attended to.

BETA.—HEALTH has no connection, direct or indirect, with any other journal whatever. You must have mistaken the name of the periodical. 2. We have seen the journal. 3. Beneath notice.

INDEXER.—1. The muscle you mean is one of the *flexors* or "benders" of the fingers. 2. The vagus or pneumogastric nerve. 3. Corpus callosum.

J. BROWN.—Apply to the publishers, please.

C. C. O.—We believe there is an agency in this country. Apply to *Engineering*, or such journal.

TESTA.—Any text-book of botany will give you the information you desire.

J. GRAVES.—Yes, the disease has been so transmitted. There is nothing unusual in such an event.

J. ALLAN, ROSA, F. R. S., CETA, AND R. B.—Declined with thanks.

ALGOA.—The disease is one of the nervous system. It is of somewhat rare occurrence.

T. E. L.—1. Apply to the publishers. 2. See HEALTH No. 90.

X. Y. Z.—If you mean by your question whether you can become a physician without specialising surgery we say "Yes," although most, if not all, the licensing bodies demand a certain amount of surgical knowledge. But if you mean by omitting "surgical practice" the entire omission of all the practical and clinical work which every student has to undergo, we say, "Decidedly not."

J. T. SAXE.—See HEALTH Nos. 109 and 110.

ALBERT G.—1. The structure you name is found in the brain of the fish as well as in that of man. 2. Shortly.

J. S. B.—There are no means of obviating the nuisance, we fear; simply see to the cleanliness of the surroundings.

PETER A.—You mean "lymphatic vessels." "Absorbents" is another name for these vessels, and "lacteals" are those absorbents which carry chyle from the digestive tract to the thoracic duct.

SANITARY.

J. T. N.—There is ample evidence of want of drain-ventilation in the case you quote. You must have the drains tested, and the whole house thoroughly inspected. No other procedure will ensure your safety from disease produced by foul air.

ORION.—1. Not more than thirty or forty. 2. Yes.

ELLEN B.—We can only recommend you to see that the overflow of the cistern does not communicate directly with the drains. This is a common error in the arrangement of houses. If, as you say, the purple colour of the water to which Condy's Fluid has been added disappears, there is probably some organic contamination which wants looking to at once.

J. A.—The invention is well adapted for your purpose, and as the appliance is cheap, you need have no hesitation in giving it a trial.

CURIOUS.—1. The system is in operation in Edinburgh. 2. At Halifax.

THOMAS BRAID.—A consequence of vitiated air. You must see to your ventilation. There is no other means of alleviating a very crying nuisance.

GEORGE REID.—1. The duty you name is incumbent upon the medical officer for the district. 2. Apply to a solicitor.

JOHN P.—There should be no difficulty in applying such a test. Try it, and write again as to result.

K. B. L.—We think the matter was treated at length in a recent number of the journal to which you refer. The subject is rather outside the scope of HEALTH, wide as our programme is.

BEATRICE G.—The child may safely be sent to school.

FOL.—A little care in the construction of such an apparatus is

necessary, but as you have had a training in manual work, we should think you might safely undertake the task. Your ideas as to size, &c., are correct.

ALLAN C.—Apply to Messrs. Khrone & Sesemann, Duke-street, Manchester-square, London, W.

GERNON.—Your particulars are insufficient to enable us to form an opinion regarding the matter you write about. If you will write more fully, we may be able to advise you. The law is in your favour so far.

H. B.—Your questions can only be answered by a chemical analysis of paper and paint, and this, we need hardly say, we cannot undertake for you. Submit larger samples to Mr. Kingzett, F.C.S., Trevena, Amherst-park, Stamford-hill, N., and he will analyse and report upon them for a moderate fee. It is worth your while to obtain such a report, if only to ensure your sanitary safety.

A SUFFERER.—Yes; sewage gases are occasionally difficult to detect, and may cause illness without giving evidence of their presence by perceptible or annoying smell. We advise you to adopt the one certain cure, namely, to have your drains thoroughly supervised. Ensure safety by seeing that all the traps are in good working order, and that your house is disconnected by an efficient trap from the sewer into which the drains discharge.

MEDICAL.

JUMBO.—We should not advise you to resume your trade of stone-mason. You would simply be inhaling the stone-dust again, and the result would likely be more disastrous than in your first attack. Don't sacrifice your present health even to the chance of injury by resuming a (for you) decidedly dangerous trade.

A. C.—1. The person you name is a qualified practitioner. We know nothing of his pretensions or practice. 2. Only under circumstances the selection of which is subject to editorial approval and judgment.

J. BARNES.—The wen should be excised by a surgeon. It is a simple operation. We can send you address of a London surgeon, if desired, on receipt of stamped addressed envelope.

J. E. E.—You are very foolish in imagining that there is any "cancer" in your case. You suffer simply from muscular rheumatism. Try the effect of rubbing hot oil or warm vaseline on the part, and take a hot bath occasionally, to which Tidman's sea-salt has been added. Take now and then twenty grains of bromide of potass in a wineglass of water at bedtime, when the symptoms trouble you. We only send address of surgeons when a stamped addressed envelope is enclosed.

H. J.—Call on Messrs. Khrone and Sesemann, Surgical Apparatus Depot, Duke-street, Manchester-square, London, W., and you will be supplied with what you require at moderate cost and of first-class workmanship.

A. B.—Try the effect of taking twenty grains bromide of potass in a little water when the symptoms trouble you. The ailment from which you suffer is a purely nervous one, and a change of air would be likely to do you good. If not bettered, write again.

REPENTANT.—We said avoid fluids late at night, and also suppers. If you only took the trouble to read the replies given to you with ordinary care, you would save yourself and us much trouble. We cannot certainly occupy space here by giving you a code of instructions about ordinary health matters such as your own common sense should teach you to observe and know. As far as your breath is concerned, look to your teeth, brush them night and morning with camphorated chalk, and eat a charcoal biscuit occasionally after your meals.

WREKIN.—See and follow advice to "Demos" in the last number of HEALTH. You have no cause to be alarmed.

ROUND SHOULDERS.—Apply at any depôt for the sale of india-rubber goods, or call on any surgical instrument maker, who will be able to suit your case. Messrs. Khrone & Sesemann, Duke-street, Manchester-square, London, W., will supply you if you write describing your wants to them.

COLWYN.—In such a case we should recommend you to look to your general health. Take a desert-spoonful of Carnrick's Peptonised Cod Oil and Milk (with fifteen drops of *Fer Bravais* added thereto) thrice daily after your meals. Go to the seaside for a time (change of air in such cases is always beneficial), and syringe the nostrils twice daily with tepid water to which a little Condy's Fluid has been added. If not cured, write again.

E. WILBY.—You are an exceedingly foolish person to imagine as you do, that you have any such ailment. Under the circumstances, your best plan is to consult any good surgeon in Leeds, who will speedily advise you and put an end to your doubts and troubles. If you cannot afford a fee, go to the Infirmary by all means. Steer clear of quacks, who make harvests out of cases like yours.

MARY STUART.—1. We fear in such a case there is little hope of the eyelashes growing again. 2. Try applying a little pure vaseline to the lids each night. 3. Wear tinted blue glasses. There are special glasses, made with a little shade over the top of each glass, blue tinted, and manufactured by Messrs. Vale, of Birmingham, which we think would suit you admirably.

HANSARD.—1. Certainly not; camphorated chalk is a safe dentifrice. 2. The habit is a curious one. Many children exhibit such a habit of tearing the blankets. We can only advise you to exert a strong mental effort, and to endeavour to check the disposition, which is evidently automatic in your case, and as such will be checked by conscious disapproval thereof.

P. G.—Apply the bicarbonate of soda and glycerine lotion recommended to "Thirty-Five" in last week's HEALTH, and avoid overheating and chills.

J. H.—Give up suppers, and take at night a bottle of the Victoria Water (advertised in HEALTH) by way of correcting the acidity from which you suffer. A trial of this will probably cure you; if not, write again. Look, of course, to your digestion, and take light foods.

J. A. K.—[Your letter was erroneously addressed. All letters requiring answer here, should be addressed to the Editor of HEALTH.] You suffer from acidity and indigestion. Rest after your meals, and let your food for a time consist of soups, white boiled fish, milk, and milk puddings, &c. Take Brand's or Mason's Beef Essences. Try also Morson's Pepsine, to be taken with your food. See that you regulate your meal hours, and that you do not allow too long an interval to elapse between your meals. If constipation exists, take the Cascara Cordial (Parke, Davis, & Co.'s) as recommended to "Wanderer" in the last number of HEALTH.

ANXIOUS.—Try the Victoria Water (advertised in our pages), as a safe and efficient drink, and one highly suitable to your case. Coffee in the morning will do you no harm.

JOHN WILSON.—1. Let your own inclinations guide you. You don't suppose there is any fixed rule for such matters. 2. Be moderate in all things—from once to twice weekly, perhaps.

WATCHMAKER.—See and follow advice given to "J. A. K." above. In your case the Cascara Cordial named in the advice indicated is especially calculated to be useful and advantageous.

INSECT.—The vapour of bromine, proceeding from a phial left uncorked for a time in a room, has been recommended for flies.

[*Continued on page* 304.

"It is admitted by all that Oats are the most nutritious of all cereals, and that Scotland produces the best oats of any country in the world."

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Established 1813.

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A NEW AND SPECIAL PREPARATION FROM FINEST SCOTCH OATS FOR INFANTS AND INVALIDS.

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WILSON'S BABY BISCUITS.

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AND HYPOPHOSPHITES OF LIME AND SODA

IS AS PALATABLE AS MILK.

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THE BEST REMEDY IN EXISTENCE FOR THE CURE OF

Consumption, Scrofulous affections, General Debility, Wasting Diseases, Coughs, Colds, and Bronchitis, and is unequalled for Children suffering from Marasmus and inability to digest ordinary food.

Any Chemist can supply it at 2s. 6d. and 4s. 6d.

PREVENTION AND CURE.

SMALL-POX.—Any person taken with this dread disease should be kept in a cool darkened room, to prevent disfigurement, and take nothing but Lamplough's Pyretic Saline. This simple treatment, after years of observation, has proved more effective than any other.

CHOLERA.—The late eminent Dr. Stevens recommends Lamplough's Effervescing Pyretic Saline every 15 minutes to any one attacked by this disease. The success of the Saline treatment was such that, out of 465 cases so treated in Coldbath-fields Prison, all but four recovered.

LAMPLOUGH'S PYRETIC SALINE "SAVED MY LIFE," (NEVER BE WITHOUT IT.)

"For the Fever had obtained a strong hold on me. In a few days I was quite well."—*Extract from letter of C. Fitzgerald, Esq.*, when Correspondent of the *Manchester Guardian* in Albania.

THE GREAT REMEDY for Headache, Sea or Bilious Sickness, Constipation, Indigestion, Lassitude, Low Spirits, Heartburn, and Feverish Colds; prevents and quickly relieves or cures the worst form of Typhus, Scarlet, Jungle, and other Fevers, Prickly Heat, Measles, Eruptive or Skin Complaints, &c.

Sold by all Chemists in Bottles at 2s. 6d., 4s. 6d., 11s., and 21s. each.

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JEYES'

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NOT FARINACEOUS.

MELLIN'S FOOD for INFANTS and INVALIDS.

TESTIMONIAL.

Woman's Hospital and Foundling's Home,
Detroit, Mich., January 3rd, 1881.

We treat, in the course of a year, a great number of children. Since we have used Mellin's Food the mortality has been reduced by more than one half. Our children have never looked so well and healthy as they do at the present moment.

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BONIFACIUS WATER, Pure from the Spring, as supplied to PRINCE BISMARK.

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1s. 1½d. per bottle.

TO BE HAD OF ALL CHEMISTS, OR OF THE IMPORTERS,

BONIFACIUS COMPANY, 13, RAILWAY APPROACH, LONDON BRIDGE, LONDON, S.E.

This remedy, however, should be very carefully used. We should prefer using a Sanitas Vaporiser, and by using Sanitas Fluid therein, and charging the air of the room therewith, the flies may be killed and the room purified. Apply to the Sanitas Company—see advertisement in HEALTH.

FRED WILLIS.—You suffer from no disease. What you name is quite common in all healthy persons. Read and follow advice given to "Demos" in HEALTH of last week, and steer clear of quacks of all kinds.

HAMMER.—Continue the cold sponge bath each morning, eat plenty of stewed fruits, vegetables, whole-meal bread, &c., by way of correcting the constipation, and take for a tonic a teaspoonful of Fellows' Syrup of the Hypophosphites thrice daily in a wineglass of water after your meals. This will brace you up.

SANITAS.—Avoid suppers and fluids late at night, and take through the day, as an ordinary beverage, the Victoria Water (advertised in our pages). Such conditions as yours often arise from an acid state of the secretions, which the use of this water will correct. Avoid constipation (if such exists) by the use of the Cascara Cordial (Parke, Davis, & Co.), as recommended to "Wanderer" in the last number of HEALTH. Constipation is in itself a frequent cause of such symptoms.

CLERK.—Certainly not; never spend money foolishly in quack remedies. Let your friend read and follow, carefully, advice to "Demos" in last week's HEALTH, and he will recover from all the weakness at present affecting him. Beware of quacks and quack advertisements.

JACOBUS.—See and follow advice given regarding food, &c., to "J. A. K." in the present number of HEALTH, and take a teaspoonful of Fellows' Syrup of the Hypophosphites after your food, thrice daily. Take moderate outdoor exercise, and try a cold sponge-bath each morning.

G. S.—You may, once and for all, utterly distrust all such statements; and you should bear in mind that persons who are given to thinking as you state are usually ignorant and morbidly-minded. There is no standard or criterion as to size. What is it that your friend desires? Advise him to be less foolish, and to be content with his possessions. He will probably find them perfectly capable of supplying all his needs.

TOKAR.—So long as you are inclined to magnify your troubles, and to exaggerate every little ache and pain into a symptom of disease, so long will you continue in your depressed state. In one breath you say you have improved greatly; in the next you proceed to hunt about for fresh evidences of failure of health. We cannot advise you further, save to add that you should know now that what you complain of is only a sign of health, and is, at the most, of no consequence. Simply attend to your food (rest after meals), continue the cold sponging each morning, and, above all, cultivate your best medicine—a cheerful mind.

C. E. GOODWIN.—Take the Cascara Cordial (Parke, Davis, & Co's.) as recommended to "Wanderer" in the last number of HEALTH, until it relieves constipation, and restores the normal tone of your digestive system. Let your food be light, and give up tea and coffee, substituting therefor Scott's Midlothian Oat Flour, or Grant's Scotch Oat Flour. After meals take ten drops *Fer Bravais* in water, and see that you rest after your food. If not bettered, write again.

ERASMOSE.—What you read was simply a piece of quack exaggeration. Quacks always circulate such lies, in order to alarm and thus fleece the unwary and ignorant. You, however, must at once renounce such habits, by a strong mental effort, as to persist therein would mean in time, great nervous prostration. Read and follow advice given to "Demos" in the last number of HEALTH, and take plenty of open-air exercise.

JAS. DUNCAN.—The blood comes evidently from your throat; such symptoms are common in congestion of the larynx (or organ of voice), and your digestive troubles probably increase the irritation. We advise you to take after your meals, for some time, a dessertspoonful of Scott's Pure Cod-Oil Emulsion with Hypophosphites (advertised in our pages), and to add ten drops *Fer Bravais* to the oil. This will brace you up. Give up suppers late at night, and before bed inhale for a few minutes the vapour of a pint of hot water to which a teaspoonful of Friar's Balsam has been added. Give up active exertion for a time, and let us hear how you are after a trial of this advice. As regards the rib, go and see a surgeon. We think you have only suffered from a severe contusion.

RECRUIT.—We cannot advise you to any measures which will prevent you "falling out." Our best advice is for you to pay a visit to your doctor, undergo an examination, and see if he certifies you as able to bear camp-life. You will err greatly if you try such a life when you are not over-strong.

PROTEUS.—What do you mean by "very frequently?" Such events are perfectly natural in the life of healthy persons, and are no sign of disease—only quacks will tell you so. See and follow advice to "Demos" in last week's HEALTH. Avoid constipation especially; and give up taking fluids late at night. Take plenty of outdoor exercise.

DORA.—Look to your digestion in the first instance, and take for a time a teaspoonful of Fellow's Syrup of the Hypophosphites, thrice daily, in a wineglass of water after your meals. At bedtime inhale the steam arising from a pint of hot water, to which a teaspoonful of Friar's Balsam has been added. If not cured, write again.

BOLTON.—Why should you be troubled so when you possess legitimate means at hand of arresting your ailment by recourse to natural methods? See and follow advice to "Demos" in last week's HEALTH.

CERES.—The druggists you have consulted must be unusually stupid if they do not understand what is meant by "lime," as given in the prescription you were ordered in HEALTH. Perhaps it may aid their comprehension if you inform them of the nature of the prescription. Druggists are not usually dense and unintelligent, as those of your neighbourhood appear to be. Why do you not show them the prescription given you?

T. W. WILKINSON.—By all means try sea-bathing, but we should recommend you to go to a more bracing locality than Bournemouth. In your case, Hastings or Eastbourne would prove much more suitable. You suffer from overwork and mental worry, and in all probability the change you propose will do you good. Take fifteen drops *Fer Bravais* in water, thrice daily, after your meals.

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BEST AND CHEAPEST DISINFECTANT.

"For cleanliness, absence of disagreeable odour (no small boon in the matter of disinfection), effectiveness in destroying smells, infections and their causes, the 'Sanitas' Fluids are not to be surpassed."

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"The 'Sanitas' Fluid, Oil, and Emulsion, are adapted for use under all possible conditions requiring disinfection, and the handy 'Fumigator,' which the 'Sanitas' Company now sell, renders it possible to disinfect a room thoroughly at a small cost."

(Extracts from "HEALTH," October 15, 1883.

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INVALUABLE IN ALL CASES OF WEAKNESS.

Lancet says:—"A beautiful and interesting preparation."

British Medical Journal says:—"An eminent London Physician writes to us: 'I have tried it extensively, and given it in cases in which no other form of iron could be taken. It is the best preparation of iron that I have met with.'"

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Sail during the Season for Kyles of Bute, Ardrishaig, Islay, Oban, Fort William, Inverness, Staffa, Iona, Glencoe, Loch Awe, Tobermory, Portree, Gairloch (Loch Maree), Ullapool, Loch Inver, and Stornoway, affording Tourists an opportunity of visiting the magnificent scenery of Glencoe, the Cuchullin Hills, Loch Coruisk, Loch Maree, and the famed Islands of Staffa and Iona. Official Guide Book, 3d. Illustrated, 6d., cloth gilt, 1s. Time Bill, with Map and Tourists' Fares, free by post from the Owner, DAVID MACBRAYNE, 119, Hope-street, Glasgow.

MORSON'S PEPSINE

Preparations of

Highly recommended by the Medical Profession for

INDIGESTION.

As Wine in Bottles at 3s., 5s., and 9s.; Lozenges, 2s. 6d. and 4s. 6d.; Globules, 2s., 3s. 6d., and 6s. 6d.; and Powder, as "Medicinal Pepsine," at 2s. 6d. and 4s.; and "Porci," a more concentrated preparation than the Medicinal, at 4s. 6d. each.

SOLD BY ALL CHEMISTS.

The popularity Pepsine has acquired as almost a specific for chronic dyspepsia, indigestion, &c., is due to the fact that it is the nearest possible production of the active principle of the gastric juice of the stomach. Unfortunately, like all other inventions of a like nature, Pepsine has been not slightly discredited by the spurious manufactures that have been issued from time to time; it is therefore necessary as a guarantee of its efficacy to see that each bottle bears the makers' name,

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Cheap, Light, Strong, Waterproof. In 10-yd. rolls, 40in. wide, 2d. per yard. Sample roll, Parcel Post, 2s. 6d. Use under slate and tile; temporary roofs; linings for dog kennels, outhouses, &c. *The best cure for damp walls.* For export.

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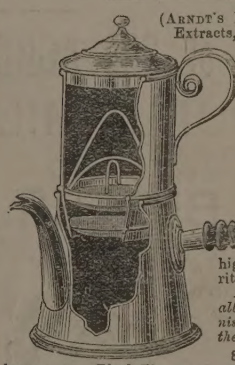

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Have received the following unsolicited Testimonial from the Vicar of St. John's, Waterloo, S.E.

[Copy of Letter.] St. John's Vicarage, 34, Waterloo-bridge-road, S.E.

Dear Sir,—Notwithstanding the unpleasantness of our last communications, I write to say that, if you wish to refer any one to our church to see your system in operation, I shall be most happy to explain it to them by appointment. It gives complete and entire satisfaction.—Yours faithfully, (Signed)

April 9, 1885. ARTHUR W. JEPHSON, Vicar.

Mason Buildings, 4, Harrington-street, Liverpool, July 15, 1885.

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Dear Sirs,—I have much pleasure in testifying that the Invisible Roof Ventilators fixed by you in Cressington Church give me every satisfaction, whilst at the same time they do not detract from the appearance of the Building. The Church is now most comfortable in warm or stormy weather. Yours truly, (Signed) J. FRANCIS DOYLE.

CAUTION.—The public are Cautioned against dealing with unprincipled firms offering worthless imitations of the Waterspray Ventilator. Legal proceedings will be taken against all selling or using the same.

THE ÆOLUS WATERSPRAY CO. did not exhibit at Birkenhead, Eastbourne, Cornwall, Tynemouth, or any of the London Exhibitions or so-called Competitions, 1881, 1882, 1883, 1884, at which prizes were awarded for Ventilators.

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Printed and Published for the Proprietors by Charles Wyman, at the Printing Office of Wyman & Sons, 74-76, Great Queen-street, London, W.C.